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MARYLAND FISHERIES

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LEGISLATION ENACTED BY THE GENERAL ASSEMBLY OF 1933

EFFECTIVE JUNE 1, 1933

Compiled by H. H. JOHNSON, *Chief Clerk.*

TIDAL WATERS

Oysters:

Ch. 244. Amends the size of the tooth bar of a scoop, scrape or dredge from a maximum size of 60 inches to 44 inches in length and also limits the weight to 200 pounds.

Ch. 248. Provides for the reduction in inspection tax on oysters from 3c. per bushel to 2c. per bushel and was part of the relief plan of the Department for the benefit of the oyster industry.

Ch. 300. This Act is local in nature and refers exclusively to oyster culture in the waters of Worcester County. It is companion legislation to the authorization of the Ocean City Inlet, as provided for in the Acts of 1931. The time is deferred until, in the

discretion of the Conservation Commissioner, the Ocean Inlet has been sufficiently advanced to warrant the leasing of oyster bottoms in the waters of Worcester County and also provides that he shall give notice by publishing in a newspaper of Worcester County when applications for ground will be received by him.

Ch. 302. There was some anxiety until this Act was passed that Japanese oysters might be introduced into Maryland waters. This Act specifically makes it unlawful to cultivate, plant or introduce into the waters of this State, any species of oyster except the species *"Ostrea Virginica,"* which is the oyster common to our Atlantic Coast waters.

Ch. 303. For the past two years and until September 1, 1933, the waters of Honga River, and Tar Bay are closed against scraping. This Act closes the waters against the catching of oysters by means of scoop, scrape or dredge or by similar instrument in these waters *indefinitely.* This is a local measure proposed by Dorchester County.

Ch. 385. There was some question as to whether certain oyster bars lying in the Bay contiguous to Kent County were bars which could be worked in common by Queen Anne's and Kent Counties or whether they should be exclusively Kent County Bars. This Act definitely places certain bars in the waters of Kent County. This is a local measure.

Ch. 515. This Act was proposed by the Department so as to relieve any citizens of the State desiring to tong oysters, of the necessity to license if they were under the age of 14 or over the age of 65. It also authorizes the citizens of Baltimore City to tong oysters in the waters of Potomac River and in Chesapeake Bay on such bars as are not specifically reserved for the exclusive use of any county.

Ch. 516. A compromise measure between Dorchester and Talbot Counties' oystermen in regard to scraping in the waters of Choptank River. In 1931 certain parts of the river were closed until November, 1933, against the catching of oysters by scrape, etc., and this Act closed certain portions of the river *indefinitely* and also makes a new line, prohibiting oysters being caught by scrape north and east of a line drawn from the Sinclair dwelling, situate between Upper Bar Neck Beacon and Lower Bar Neck Point on Tilghman's Island to Benoni's Lighthouse and thence to Chlora Point, Gland Neck, in Talbot County; and also in the waters above and east of a line drawn from Howell's Point in Talbot County to Horn Point in Dorchester County.

Ch. 518. Clarifies Section 23 of Article 72 concerning the dredging license and puts a direct penalty in the section for any one who dredges without a license or dredges in waters not provided for in that section.

Fish:

Ch. 103. In 1931 Section 47-A of Article 39 was enacted which defined an area in which anchored gill nets could not be used. This section makes a different line, and anchored gill nets are now prohibited in that part of Chesapeake Bay which is bounded on the north by a line drawn from Turkey Point on the Eastern Shore to Locust Point on Spesutia Island, and on the south by a line drawn from the mouth of Fairlee Creek in Kent County to Robbins Point in Harford County. This law was proposed by fishermen from Cecil County.

Ch. 263. Provides for a reduction in the legal size of rock fish which may be caught and had in possession. Heretofore the size was 12 inches in length and a limit of 15 pounds in weight. The Act reduces the length to 11 inches.

Ch. 382. This Act was proposed by the Department in the hope that Virginia would pass a Concurrent Act prohibiting purse netting by her steamers in the waters of Potomac River. It directly legislates against the use of purse or buck nets or any similar device in the waters of Potomac River but would not be binding on the State of Virginia until a similar Act is passed. Previous legislation of 1931 prohibited the use of these nets in the waters of our State.

Ch. 512. Defines more clearly Section 47 of Article 39, known as the "Head of the Bay," in which pound nets or stake nets are prohibited.

Crabs:

Ch. 262. Persons under the age of 12 years and over 65 are not required to secure a crabbers license to catch crabs for market under this section. Heretofore, the only ones exempted were those under the age of 12.

Ch. 371. Provides for the extension of the crabbing season one month, making the season for all waters of the State, except Worcester County, from May 1st to November 30th, both dates inclusive, and in Worcester County from April 1st to October 31st, both dates inclusive. As crabs have been quite plentiful for the past two years, it was deemed wise to permit them to be caught during the additional month, the indirect effect being that the oyster bars will be spared somewhat during the month of November.

Terrapins:

Ch. 209. Prohibits all persons except bona fide residents of Charles and St. Mary's Counties from catching eels, terrapin and turtles except by hook and line in the waters of these Counties except Patuxent River. This is a local measure designed to prevent any one resorting to these waters for the purpose of catching eels, to catch terrapins or turtles.

Ch. 266. Clarifies the terrapin law in restricting any person to catch terrapin in the waters only of the County of which he is a resident.

NON-TIDAL WATERS

Game and Fresh Water Fish:

Ch. 101. Section 34 of Article 39 now puts the same closed season on Savage River as has been on the Little Savage River, namely, April 1st to June 30th.

Ch. 188. Repeals and re-enacts Section 71 of Article 39 and adds a new section to be known as Section 71-A. In the first section, nothing appears now except the seasons for catching game and fresh water fish, but the second sets out the manner in which game and fresh water fish may be caught and the exceptions. The new exceptions are:

1. In fishing with rod, hook and line the number is limited to two and they must be in the immediate control of the angler.

2. In order to dip net in the waters of Susquehanna River between Hog Back Shoals and the mouth of Deer Creek, one must have a resident angler's license. Heretofore none was required.

3. It permits the catching of suckers, catfish, carp, eels and gudgeon by use of dip net of not less than 1¼ inch mesh, between February 15th and April 15th, when a person has a resident angler's license, in the waters of Potomac River; Washington County; Monocacy River in Frederick County and in Middle Creek for a distance of ¼ of a mile from where it empties into Potomac River near Lander, Frederick County, and in the mouth of the waters of any stream (for a distance not to exceed 50 yards) which empties into Monocacy River in Frederick County; and also in the waters of Montgomery County.

4. It is lawful in the waters of Frederick and Montgomery Counties for any person who has secured a resident angler's license to use a bush bob or bank pole (not exceeding a total of 25 in all) and not exceeding one hook to a pole or bob and when not baited with scale bait or live bait to catch suckers, catfish, carp, eels, and gudgeon.

5. It is lawful for a resident angler's licensee to catch shad by use of dip net between the 1st day of April and the 10th day of June, both dates inclusive, in Potomac River in Montgomery County.

Ch. 200. Deep Creek Lake license—provides that anyone holding an angler's license may fish this lake without any additional cost. Also exempts persons whether they have licenses or not who may live within ¼ of a mile of high water mark. It also reduces the cost of a non-resident license from $10. to $5. and provides a non-resident license for three days at a cost of $2. Sunday fishing in the lake is now permitted.

NOTES ON THE TROUT SEASON

THE INTEREST IN TROUT fishing in the State grows apace. More angler's licenses were issued during the current season than for any season since the enactment of the State-wide angler's license law (above tidewater). The State hatchery men are working overtime to maintain an adequate supply of trout in the more favored streams of the Western Maryland counties. When the State first began stocking the streams the full quota of fish for a given stream was placed in that stream at the beginning of the season. The result was that good catches were made in the first few weeks of the trout season and little or no fish found later on. In response to the many complaints received by the Department concerning this

FISHING CREEK—A FAVORITE OF THE TROUT FISHERMAN

condition, it was decided to stock the more heavily fished streams once a week, thereby maintaining an adequate supply of trout in the streams during the entire season. General satisfaction is expressed as a result of this plan.

In spite of unusually bad weather conditions which have made the streams extremely muddy, good fishing has been reported. Trout have all been of good size, very few being less than 8 inches long and some up to 18 inches. Frederick County streams seem to have been the hardest fished of all the State streams. At Fishing Creek or Big Hunting Creek, from 50 to 75 fishermen can be counted at almost any time during week

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In spite of unusually bad weather conditions which have made the streams extremely muddy, good fishing has been reported. Trout have all been of good size, very few being less than 8 inches long and some up to 18 inches. Frederick County streams seem to have been the hardest fished of all the State streams. At Fishing Creek or Big Hunting Creek, from 50 to 75 fishermen can be counted at almost any time during week

days. On Saturday afternoon and Sunday the number averages around 100 to 150 fishermen. Garrett County streams have also had a fair number of fishermen this season, most of them coming from Alleghany County and neighboring Pennsylvania towns. Washington County is also very popular with the trout fishermen.

The greatest difficulty which the State now faces is an adequate supply of rearing stations to meet the demands of the anglers. The four rearing stations which the State now operates at Bear Creek in Garrett, Cushwa Springs in Washington and White Rock and Richey Camp in Frederick are working at their full capacity to turn out sufficient trout, and it is evident that other rearing stations will have to be established by the Department in the near future.

The following list of distribution of trout in the local streams from January 1st to May 1st is printed for the information of those who desire to know in what streams the State is planting fish. Approximately 7,000 trout are being held for June distribution:

Fish Distribution From January 1 to May 1, 1933

GARRETT COUNTY		
Savage Run	700	Brook Trout
Blue Lick	300	Brook Trout
Bear Creek	3,720	Brook Trout
Deep Creek Lake	8,815	Brook Trout
Total	13,535	
HARFORD COUNTY		
Evans Run	150	Brook Trout
HOWARD COUNTY		
Little Patuxent	390	Brook Trout
East Branch	270	Brook Trout
Sucker Bran h	75	Brook Trout
Total	735	
WASHINGTON COUNTY		
Little Tonoloway	440	Rainbow Trout
Forney Young Run	510	Rainbow Trout
March Run	410	Rainbow Trout
St. James Run	915	Rainbow Trout
Extines Run	390	Rainbow Trout
Rush Run	320	Rainbow Trout
Little Antietam	300	Rainbow Trout
Total	3,285	
ANNE ARUNDEL COUNTY		
Kitten Run	150	Brook Trout
Severn Run	2,260	Brook Trout
Adams Branch	150	Brook Trout
Total	2,560	

BALTIMORE COUNTY		
Trib. Piney Run	120	Brook Trout
Beaver Dam	60	Brook Trout
Patapsco	60	Brook Trout
Long Quarter Branch	60	Brook Trout
Owl Branch	100	Brook Trout
Deep Run	100	Brook Trout
Line Kiln Run	250	Brook Trout
Pot Spring Branch	250	Brook Trout
White's Branch	100	Brook Trout
Jones Falls	1,000	Brook Trout
Total	2,100	
CARROLL COUNTY		
Beaver Branch	500	Brook Trout
CECIL COUNTY		
Perryville Reservoir	200	Brook Trout
FREDERICK COUNTY		
Fishing Creek	3,615	Brook Trout
Big Hunting Creek	2,470	Brook Trout
Little Hunting Creek	800	Brook Trout
Turkey Run	430	Brook Trout
Little Owens Creek	370	Brook Trout
Tuscarora	610	Brook Trout
Total	8,295	
Fishing Creek	960	Rainbow Trout
Little Hunting Creek	230	Rainbow Trout
Big Hunting Creek	640	Rainbow Trout
Total	1,830	

NOTE—We planted in Garrett County from November 1, 1932 to January 1, 1933, 4,560 Rainbow Trout.

A PLAN FOR MARYLAND CRAB PACKERS

FOLLOWING, and as a result of, a comprehensive survey of the crab industry of Chesapeake Bay, the Conservation Department has recently published, and sent to all licensed crab packers of Maryland, a pamphlet entitled, "*Suggested Plan for Marketing Maryland Crab Meat.*" This booklet, which sets out in considerable detail the findings of the survey, makes a number of suggestions for the marketing of crab products which, if adopted, would be of considerable benefit to the industry.

Prior to the survey, very few facts were available concerning the problems and factors involved in the market distribution of crab products, and so long as there was a scarcity in the supply of crabs, the present system of operation was fairly successful. With the enactment of remedial legislation to protect the female crab bearing the egg-sponge in Virginia waters, the supply increased prodigiously and profits dwindled, because substantially the same markets, viz: Baltimore, Washington, Philadelphia and New York, to which crab shipments had been made when the

supply was scarce were receiving the greatly increased production. As a consequence, these markets, particularly Baltimore, which received the bulk of the supply, became overstocked.

The following plan recommended to assist the crab packers of the State in their marketing operations is quoted from the printed bulletin issued by the Department:

1. The results of the Crab-Marketing Survey showed clearly the two fundamental objectives that must be accomplished before the State's crabbing industry can be conducted on a profitable basis. These objectives are: (1) To stabilize conditions in the Baltimore market; and (2) To effect a wider market distribution for crab products.

2. In any attempt to develop a practical merchandizing plan for the distribution of Maryland crab meat, incorporating the two essential elements indicated above, it will be necessary for the industry to adopt certain grades and standards for its products. In addition, it is highly imperative that all packers rigidly adhere to the adopted grades and standards. Unless the fullest cooperation possible is given in this connection by all the packers, the potential results of their cooperative efforts can be only partially realized.

3. At the present time Maryland crab meat may be packed under the same trade classifications by different establishments but lack a uniformity in quality. It should be emphasized that only by means of definite grades and standards can crab meat be successfully marketed in considerable quantities at fair prices over wide areas. It is proposed that the crab packers of the State, through their organization, make and rigidly enforce such trade regulations.

4. In order to further standardize the marketing of Maryland crab meat it is recommended that the Packers Association adopt some standard type of lithographed container bearing a distinctive trademark for the exclusive use of the member packers of the Association. Each member-packer could conveniently be given a number to be placed on the cans which he packs, so that the packer could be identified within the Association but not necessarily to the trade.

5. The successful execution of the ideas relating to the adoption of grades and standards, a uniform container, and a trademark would enable the packers of the State to distrbute throughout their marketing area a product of uniform quality. Successful promotional and advertising efforts can be achieved only through an adequate realization of the various factors just indicated. It should be quite clear that unless the factors mentioned are placed into actual practice, there is really no definite product for the Packers Association to advertise to the public with a view towards creating a greater and more widespread demand.

6. While there are considerable possibilities for the building up of small package trade in crab meat produced by the dealers in Maryland, it is realized that outside of Crisfield there are comparatively few packers who are willing or financially able to equip themselves to handle this type of business. The increased office and plant expenses involved in the development of this class of trade would make it almost impossible for many dealers to develop independently this type of business.

7. In order to effect a wider distribution for the products of the dealers located outside of Crisfield, it is essential that some selling agency be developed. The logical localities from which the small package trade in crab meat could be most conveniently handled are Baltimore, Cambridge, and Crisfield. It is believed that this distribution can be developed by the packers and dealers in these localities through their present organizations.

8. It is the usual practice for commission dealers to buy the output of many

crab-meat packers at what amounts to net commission prices, in addition to selling on commission other crab-meat receipts. In order to bring about some uniformity and to improve the present marketing conditions of the crab-meat industry, it is recommended that the commission men should cease to buy crab meat outright, and to handle on a commission basis only, the crab-meat products of the Packers Association.

9. In this connection it is also recommended that the Packers Association should deal as a unit with the present large commission dealers, and arrange for the individual member-packers to do business only with those who will work harmoniously along with the Association and cooperate with it in the execution of its policies. It is also suggested that the crab-meat packers agree not to make any direct sales in Baltimore for redistribution among the retailers located in that city.

10. In order to achieve a larger and more widespread distribution of crab-meat it is essential that some form of promotional and publicity activity should be carried on. It is fully realized that the prosecution of such activities involves the expenditure of a certain amount of money in order to derive the maximum results from such efforts. There is presented below a convenient plan whereby the necessary funds for carrying on the publicity and promotional activities could be secured without material hardship to the interests concerned.

11. It is customary at the present time for the commission dealers to make a charge of 12½% for disposing of the crab meat shipped to them on consignment. It is recommended that this rate of commission should be increased to 15%, with 10% going to the dealer, and 5% reverting to the Packers Association to be subsequently used for promotional and advertising efforts.

12. If an average selling price of 20 cents per pound can be attained for all Maryland crab meat sold annually by the Baltimore Commission Dealers, the 5% reverting to the Association would amount to approximately $15,000 for the season. This fund, of course, would be used in the promotion and advertising of the Association's brand of crab meat, particularly in areas where it is now little known. It should be emphasized that every packer who is a member of the Association would thereby assist in advertising crab meat to the public. This advertising would necessarily be a cooperative undertaking, in which all the packers would benefit.

Detailed Treatment of the Proposed Plan for a Larger, and More Widespread and Profitable Distribution of Maryland Crab Meat

In order to present this plan before the crabbing interests of the State it is necessary that they should have some general idea as to the set-up and activities of some of the various factors indicated in the foregoing discussions. To accomplish this there is presented below a brief description of some of the various functions of the association.

1. *The Crab Packers Associations.*—The present Associations of Seafood Dealers should serve as the basis for the organization of an association comprising all of the crab-meat packers in the State. Aside from certain general considerations. the name of the Association and many of the varied and detailed functions are left to future determination by the interests concerned. Suffice to say, the Association should be organized under the laws of Maryland as a non-profit corporation. It should have permanent headquarters and a set of directors and officers, to be elected by the member packers.

2. *Relation between the individual packers and the Association.*—The individual packers operating throughout the State of Maryland would be eligible to membership under the rules and regulations to be later adopted by the Association. For the maintaining of specified standards in the packing of crab meat, the individual packers should enter into some form of contractual agreement with the Association. The exact details of such contractual relationships are left for later determination by the individual packers who are to make up the Association.

3. It is planned to develop a new consumer demand for crab meat throughout the territory of Western Pennsylvania and Ohio. It is also planned to make it possible for the Commission Dealers in Baltimore to participate in supplying the newly created demand in the Middle West. In engaging in such marketing activities the Association should enter into some form of contractual relationship with the dealers in question. The most important element of this agreement would be perhaps some form of a restraining clause, prohibiting the dealer from purchasing his crab meat (within specified limitations) from other agents or individuals than the member association itself. This, of course, is only one of the elements involved in the arranging of a working agreement between the Association and the commission men or distributors.

4. *Grades and standards.*—One of the primary functions of the Association would be to develop a uniform classification of grades and standards for the marketing of crab meat. The accomplishment of this objective is fundamental to all efforts of the Association in the development of a larger and more widespread consumption of Maryland crab meat. Through its contractual relationship with the individual packers, and with the possible cooperation of the State Health Departmant, it is believed that the adopted grades and standards could be successfully placed in operation. Like certain other phases of this plan, the determination of the proper grades and standards is left for later consideration.

5. *Standard container and trademark.*—The adoption of an attractive lithographed standard container, bearing a distinctive trademark, is going to be of great importance in introducing crab meat into areas where it is now scarcely known. The advantages involved in the adoption of these practices can be readily visualized, and further elaboration is unnecessary.

6. *Cooperative purchasing.*—If the conditions within the crab industry can be fairly well standardized by the Association, it would be possible for the Association to render to its members a very valuable service in the form of cooperative buying, that is, the more essential products, such as lacquered cans, et cetera, could be purchased in large quantities, and make possible substantial savings for each member-packer.

7. *Advertising.*—As stated in a previous section of this report, a charge of 5% of the selling price of the crab meat sold on commission in Baltimore should revert to the Packers Association to be used as a fund for furthering the interests of the crab-meat industry. This fund would be spent under the direction of the Packers Association, subject to the approval and recommendation of the member packers. It is felt that this cooperative form of advertising would eliminate the duplication necessarily involved in individual efforts to acquaint the public with crab products.

8. It may appear that to decrease the income of the commission merchants by 2½% and to decrease the net return to the crab-meat packer by that same amount, would work a hardship on both interests. In actual practice, however, it is believed that the opposite condition will prevail. The increased rate of commission will have a tendency to decrease the volume of crab meat shipped to Baltimore. A considerable decrease in the amount of crab meat being shipped on a consignment basis to Baltimore would tend to relieve the glutted situation which oftens occurs in that

city; and inasmuch as the prices received for crab meat in Baltimore have a controlling influence over the prices received in other primary markets, it is evident that a decrease in the supply in Baltimore would tend to stabilize prices on a higher level in other marketing areas. It is expected that this whole situation would result in a larger volume of commissions to the dealers and larger net returns to the packers.

9. It is believed that the widespread advertising efforts suggested would develop new markets for the crab meat that is now being shipped in excess quantities to Baltimore. This would have a tendency to bring the Baltimore prices for crab meat more in line with those charged by the direct shippers located in the vicinity of Crisfield. It is expected that the net returns to the commission dealers and shippers would be considerably increased, and in addition to off-setting the fee charged for advertising, return a fair margin of profit on all crab products, especially through the stabilizing effect of the creation of a new consumer demand for crab products in areas heretofore untouched.

OYSTERS NEAR CAMBRIDGE MOVED

Last spring it was found practicable to move a quantity of adult oysters growing in the polluted zone near the city of Cambridge to oyster bars located in pure waters, it having been found that oysters so removed will be fit for human consumption within a period of 60 days after the removal to clean water. At that time about 9,000 bushels were transferred, with the approval of the State Department of Health, and the operation gave considerable employment to local tongers at the time, as well as making available a goodly supply of select oysters for the packers by the first of November.

The Department has been requested to repeat the operation this year, and Engineer H. E. Collins was sent to Cambridge to take charge of the work. Two dredge boats were employed, and upon completion of the work 5,000 bushels of oysters had been moved.

DEEP SEA FISHING RODEO

From Alabama comes notice of an interesting event to be held in the waters of the Gulf of Mexico off Dauphin Island. This event, the annual Deep Sea Fishing Rodeo, as it is called, will take place on August 7, 8, and 9. Interesting prizes are offered for the largest catches of tarpon, channel bass, bonita, blue fish, king mackerel, pompano and the many other varieties of salt water fish which are said to abound in this area.

The amateur is placed on the same level with the experienced deep sea fisherman, it is stated, and last year Dr. B. C. Garrett, a surgeon of Shreveport, La., and an amateur fisherman, carried away first prize for the biggest tarpon catch. Hundreds of sportsmen from all parts of the country visit Alabama for this annual fishing tournament.

Reservations may be made with Mr. L. G. Adams, President of the Rodeo Association, Mobile, Alabama.

MARYLAND FISHERIES

PUBLISHED BIMONTHLY BY CONSERVATION DEPARTMENT,
SWEPSON EARLE, Commissioner.

No. 22 BALTIMORE, MARYLAND MAY, 1933

THE OYSTER SEASON OF 1932-33

THE SEASON which ended on April 25th was, in the main, an unsatisfactory one. Primarily, the prevailing general economic conditions were responsible, but some of the blame rests with the industry itself, as it is now conducted in Maryland.

The Christmas oyster business was normal, or nearly so, but the slump which occurred during the Lenten season, when the demand for oysters and other sea food is usually good (and was caused by the closing of the country's banks), brought down the season's production very materially. However, the oysters that were not harvested this year will remain on the bottoms for another season's use, and be the better for the additional period of growth. In this respect, the oyster industry has an immense advantage over agriculture, where crops must be harvested at a given time or else wasted.

Many of the losses now sustained in the operation of the oyster business, may, in the opinion of the department, be obviated, or at least mitigated, if the oyster packers of the State will get together on certain lines, such as the standardization and grading of oysters, refusing to cut prices to the extent of placing oysters on the market at a loss to the oystermen and themselves, as well as wider utilization of the latest developments in refrigeration and the creation of new markets.

In a number of the oyster-producing centers of Maryland small groups of packers have formed associations to consider the advisability of working together along the lines suggested above, but until there is general cooperation among all the men engaged in the industry, the oyster business will continue to "muddle along."

GRADES FOR FISH

From April issue of *Fishing*.

The first grades for fish ever written, so far as is known, have just been announced jointly by Richard Armstrong, Virginia Commissioner of Fisheries, and J. H. Meek, Director of the Division of Markets. The technical work on these grades has been done by N. W. Broome, of the Division of Markets, assisted by J. R. Manning of the U. S. Bureau of Fisheries. They have consulted with fishermen, packers, wholesale and retail dealers, and the grades represent the best thought that can be gotten at this time.

UNDER the class of salt water fish, the grades have been announced for shad, trout, croakers, spot and butterfish.

Under the class of brine or salt cured water fish, the grades have been announced for herring.

The grades in part follow:

For Shad, Trout, Croakers, Spot and Butterfish.

Virginia No. 1 Salt Water shall consist of fish of one species that are fresh, well fleshed, taken before spawning, and free from damage caused by parasites, disease, mechanical injury or other means.

Sex: Where sex is a factor of importance, because of the presence or absence of roe, it shall be stated ,and a fish of the opposite sex is to be considered as a defect. Where roe is a factor, it shall be well developed and in a hard, fine-grained condition.

Size: Size may be set by agreement between buyer and seller, in which case the specified size or sizes shall govern the inspection. Where the size is not specified, the following shall be the minimum weight for the species named:

Shad

Roe	3½ lbs.
Buck	2 lbs.

Butterfish

Large	½ lb.
Small	¼ lb.

Spot

½ lb.

Croakers

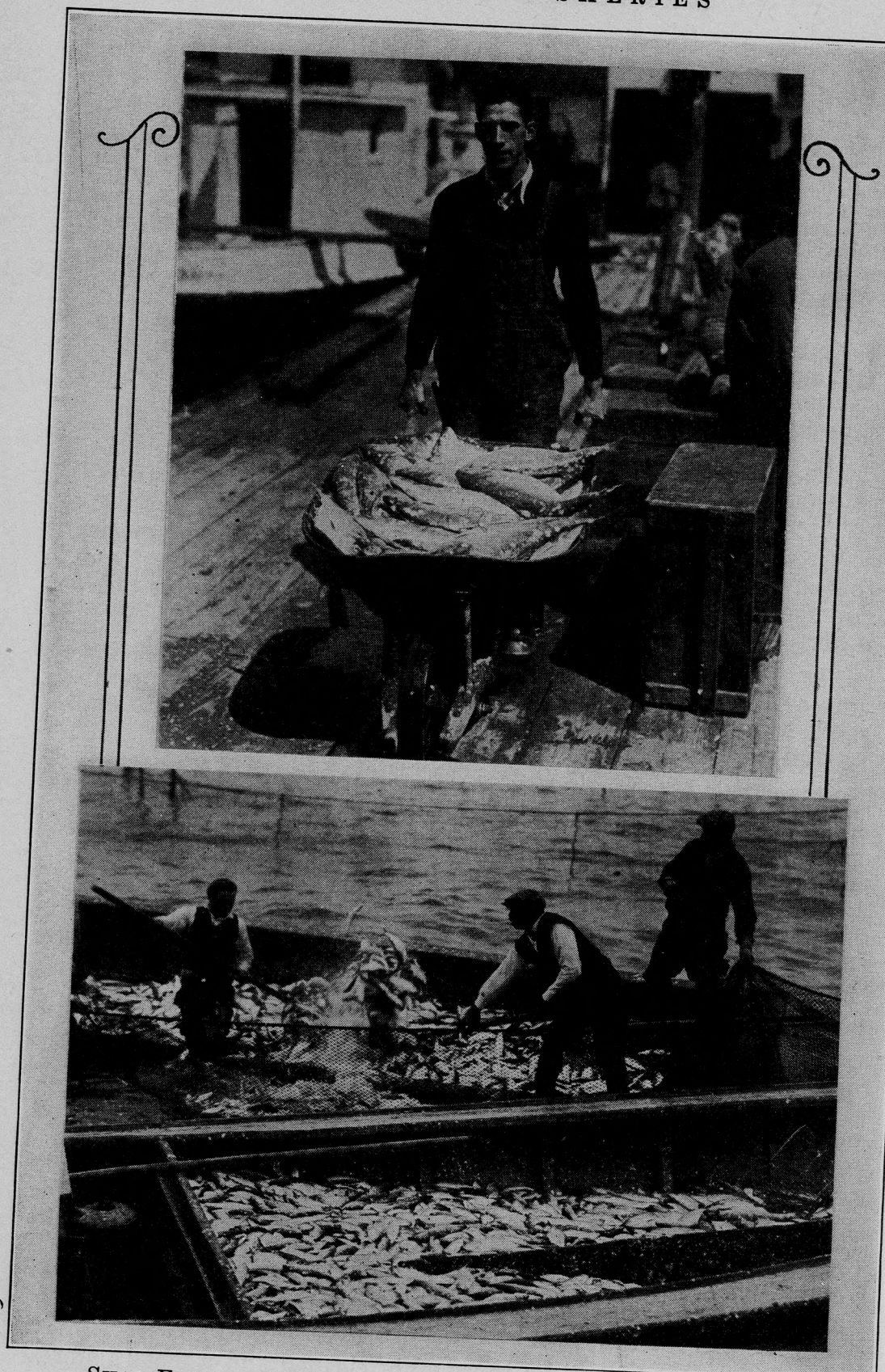
Large	2 lbs.
Medium	½ lb.

Trout

Jumbo	4 lbs.
Large	2 lbs.
Medium	1 lb.
Pan	9 in.

For Herring—Virginia No. 1 shall consist of fish of one species, taken before spawning, fresh when curing begun, well drained, bright, free from rust, of a sweet wholesome odor, thoroughly cured, with 90% of scales removed and free from damage from any cause. All clipped roe fish shall have the heads properly removed. All roe fish shall have a fairly well developed roe.

All clipped fish shall be thoroughly cleaned and washed before curing begins.



SHAD FISHING OPERATIONS IN MARYLAND—SCENE ALONG THE ANNE ARUNDEL BAY SHORE

Virginia Selects shall consist of fish that meet all the grade and packing requirements of Virginia No. 1 and in addition shall, when clipped, have all membrane and blood removed from under the main bone.

Pack: When packed in barrels herring shall be tightly packed with a circular pack and contain not less than 160 pounds of fish and 40 pounds of salt and have a count of not less than 650 and be not smaller than fish of this count when packed in other containers. The maximum and minimum count shall be plainly marked on the outside, and this maximum and minimum shall not have a spread of greater than 50. Other packs shall contain the same proportions of fish and salt and have a proportionate spread.

Size: Clipped herring shall not be less than 6 inches in length and whole herring 7½ inches.

MOVEMENTS OF STRIPED BASS IN CHESAPEAKE BAY

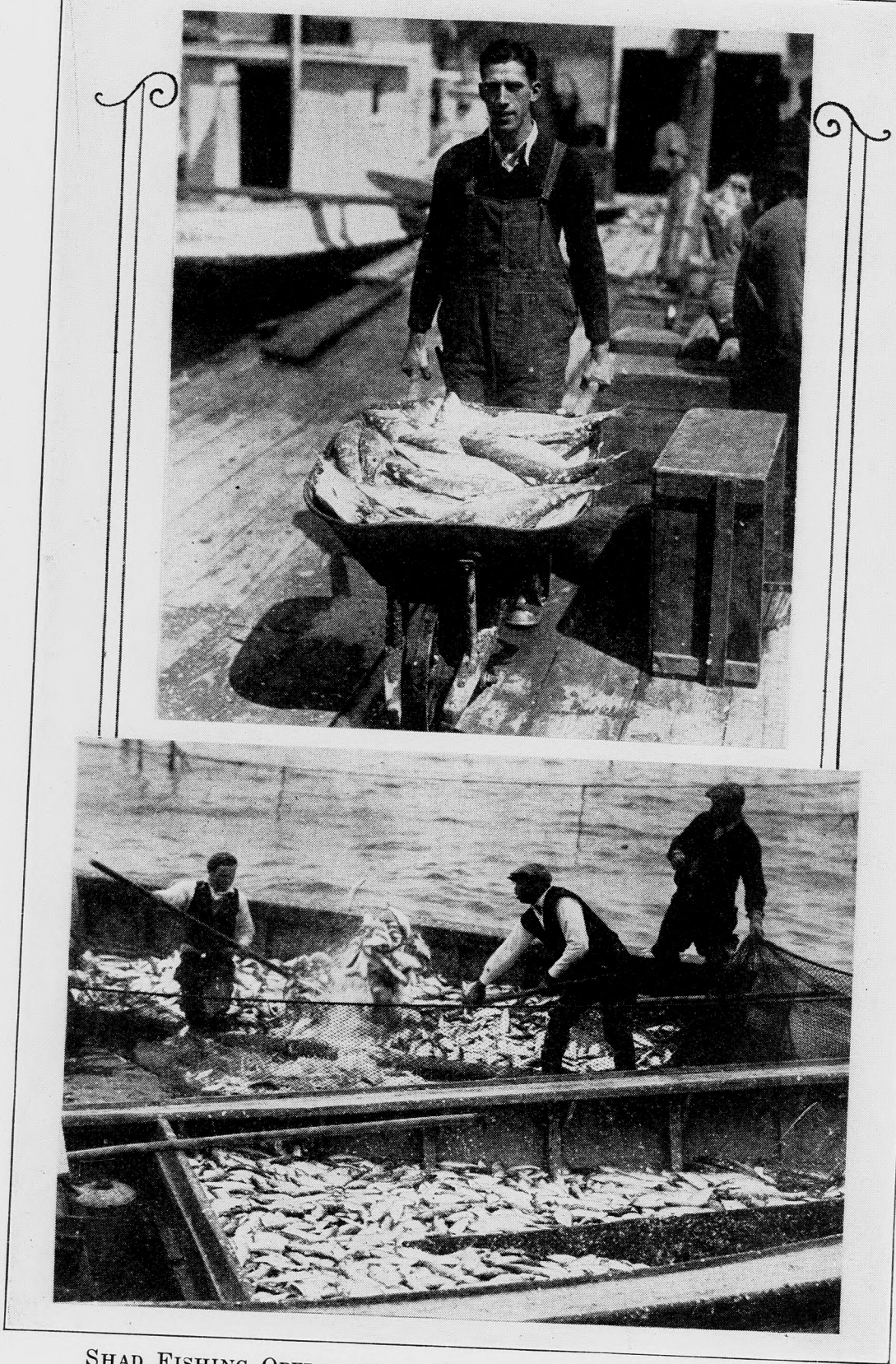
By JOHN C. PEARSON, *Assistant Aquatic Biologist, U. S. Bureau of Fisheries*

CONSIDERABLE INTEREST has been added to the question of the adequate conservation of the striped bass or rockfish in Chesapeake Bay by the recent decline of the Maryland catch from 1,227,990 pounds in 1930 to 634,909 pounds in 1931.

For several years the U. S. Bureau of Fisheries and the Maryland Conservation Commission have endeavored to learn more concerning the life history of the striped bass to assist in formulating better measures of protection to prevent depletion of the species.

The striped bass occurs in fresh, brackish, and salt water, ranging from the ocean beaches to the quiet waters of many rivers and estuaries along a large section of the Atlantic Coast. The fish is believed to spawn only in fresh water, however, any thorough study of the habits of the striped bass in Chesapeake Bay should consider the possibility of extensive movements or migrations of fish into and out of the Bay as well as local movements within the Bay and its tributaries. The species, obviously, requires the same amount of protection in the Potomac and James Rivers as in the Susquehanna and Chester Rivers provided the fish intermingle freely in all sections of the Bay.

To determine the movements of striped bass in Chesapeake Bay, the Bureau of Fisheries caught, tagged, and released during July and August, 1931, a total of 305 fish, ranging in length from 10 to 15 inches. All fish were taken on hook and line and were



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released after taggimg at the place of capture,—about one mile east of Hackett's Point, off Annapolis, Md.

The tag consisted of two celluloid disks connected by a length of nickel wire. The wire, sharpened at one end, was run through the back of the fish, slightly below the second back fin, a disk was placed on each side of the fish; and both disks then fastened securely against the sides by twisting the ends of the wire. One disk was red and bore the serial number to trace the individual fish; the other disk was white and bore the words: "Bureau of Fisheries, Washington, D. C., Return Both Disks, Reward." A fee of 50 cents was paid for the return of both disks together with information as to date and place of capture.

Soon after tagging was commenced, in July, 1931, tags began to be returned from various localities throughout the upper bay and were recovered in varying quantities during the following year. From August, 1931 to September, 1932, a total of 86 tagged striped bass were retaken by anglers and commercial fishermen, and the tags returned to Washington as requested. The number of recovered fish totaled 28% of the number tagged or more than one in every four fish tagged were retaken within the first year following release. Twenty per cent of the recaptures, moreover, were made within the first six months.

Where were these striped bass captured? None of the fish were retaken at the point of release off Annapolis. Only nine fish out of the 86 were recaptured south of the Severn River,—the majority were secured at various scattered points along the Eastern and Western Shores from the Magothy River and Love point north to Havre de Grace and the Elk River. The point of greatest concentration of tagged fish was near Rock Hall at the mouth of the Chester River. This locality has long been known as a favorite ground for striped bass.

Oddly, and perhaps significantly, six of the nine fish taken in the bay below the Severn River were secured during the spring months following release. This fact might indicate that, after the winter period in the deeper waters of the upper bay some striped bass scattered down the bay. One tagged fish was captured off Maryland Point in the Potomac River on March 17, 1932, while another fish was captured on the other side of the bay in the Wicomico River, a few miles below Salisbury, on March 23, 1932.

The dimunition of tag returns every succeeding month, and the absence of returns after a period of 13 months was probably due to the detachment of the disks from the body of the fish because of natural growth and the subsequent movement of the wire bearing the disks out of the flesh.

Several significant facts are brought out by this tagging experiment. First, a high percentage of tagged striped bass was re-

captured during the first year,—a total of 28% based on the total number of fish tagged (305). Twenty per cent of the fish were recaptured within six months following release. This relatively high recovery rate would indicate that the fishery for the striped bass in upper Chesapeake Bay is severe and that perhaps a sufficient number of fish are not permitted to grow to maturity and have a chance to spawn. Most of the tagged fish were only two years old (in their third summer), and it is known that striped bass do not commence to spawn until their fourth year (fifth summer). Consequently, most of the tagged fish had several years to live and escape capture before reaching spawning age.

How accurately these returns from 305 tagged fish represent the entire stock of striped bass in Chesapeake Bay is unknown. However, considering the scattered recoveries over a rather long period of time from all the prncipal fishing points in the upper bay, the writer presumes that the representation is adequate and and that the strain of the fishery on the available supply of striped bass is as severe as indicated by the tagging experiment.

Another interesting fact brought out was the evident concentration during the fall of released fish in the area of the bay lying north of the Severn River. The striped bass evidently preferred fresh or slightly brackish water and did not appear to seek the saltier water lying farther down the bay. However, it has not been conclusively determined whether or not any migration of importance occurs between such striped bass rivers as the Chester and the Potomac. The evidence indicates some movement of fish between these two points but further tagging experiments are desirable to prove the point conclusively.

OUR UPLAND STREAMS

By HERBERT B. MACCUBBIN, *President, Sportsmen's Chapter, Izaak Walton League of America.*

MARYLAND is bountifully endowed with the beauties of nature: mountains, valleys, forests, fields and the great Chesapeake Bay, with its mighty tributary waters. But the most cherished of its many charms by naturalist, sportsmen, picknickers and nature lovers alike are our upland streams. A valuable asset, a necessary adjunct to life, a God-given heritage, are our Maryland streams. Clear, cool, pure water, roofed by the blue of the skies and the green of the trees, a stream supplies LIFE in its varied forms. Life to the human being, to finned, furred and feathered wild life, to all manner of trees,

plants and an infinite number of small animal and insect forms, the singing water of Maryland streams is indispensable to LIFE.

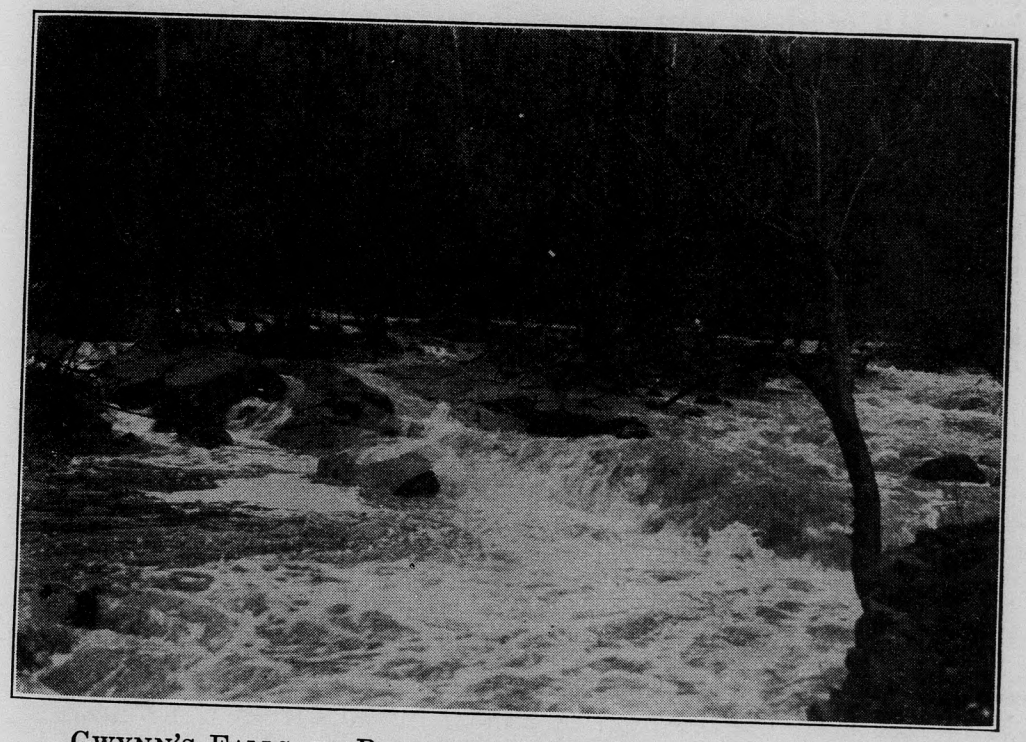
From Garrett to Worcester, weaving and interlocking thru the Maryland terrain, we find streams of life-giving water. Many watersheds amplify the natural beauties of this Maryland Free State, and as we explore them from river to source, we find here and there an angler, carefree and happy in the joys and freedom which only nature can offer. The careful observer will find that this stream draws many anglers, while that one draws none. Both flow what is apparently the same water, yet but one is furnishing life to trout or bass or other inland fish. Why?

We know from long experience that the Northwestern counties have perfect trout streams; water of the proper temperature and purity and with sufficient food to permit trout to live and increase. We also know from years of experience that trout planted in streams located away from the mountain springs have just "disappeared." Where and why remain unanswered. Your guess is as good as mine. It may be high temperatures in summer, unknown pollution, lack of food, acidity or what not. Nevertheless, it has been established, definitely, that gorgeous streams, located close to Baltimore, in the Greenspring and Worthington valleys, have, for years, been stocked with trout to no avail.

What then should be done? Plant more trout, preferably brown, and run the risk of their surviving, or plant smallmouth bass, that sturdy king of findom, and see how he makes out? I advocate any action which will put fish back where they once were and where they belong, and take out that which does not belong, namely, pollution. Gwynns Falls, a beautiful stream flowing through the Baltimore City park system, a stream where children might play and wade in, posted "Polluted!" The Patapsco branches, clear, cold and pure until a cannery or a factory suddenly "lets go" its filth. Jones Falls, in the Green Spring Valley, even now the home of native brook trout, hampered and hindered in its desire to give life by pollution.

The Izaak Walton League pledges itself to the elimination of diseased waters in Maryland; to the protection and propagation of forests, fish, game and birds; to guarantee that the kiddies of today may in their manhood and womanhood enjoy also the beauties and thrills of unspoiled nature. Let the citi-

zens of Maryland unite in this worthy cause. Stop pollution! Protect fish, game, forests and birds! Prevent erosion, stop the commercialization of Maryland's natural resources, assist the State Conservation Department, the Game Warden and the Forestry Department in the constructive work they do. Take an active interest in county, town, city or state legislation to further protect Maryland waters from the slaughtering and destructive devices and plans of those who wish to exploit our natural resources. Keep our streams clean and fit for the young-



GWYNN'S FALLS, IN BALTIMORE CITY, SADLY POLLUTED IN PARTS

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A pure stream spells LIFE!

STATE TRANSFERS OYSTERS FROM HEAD OF BAY

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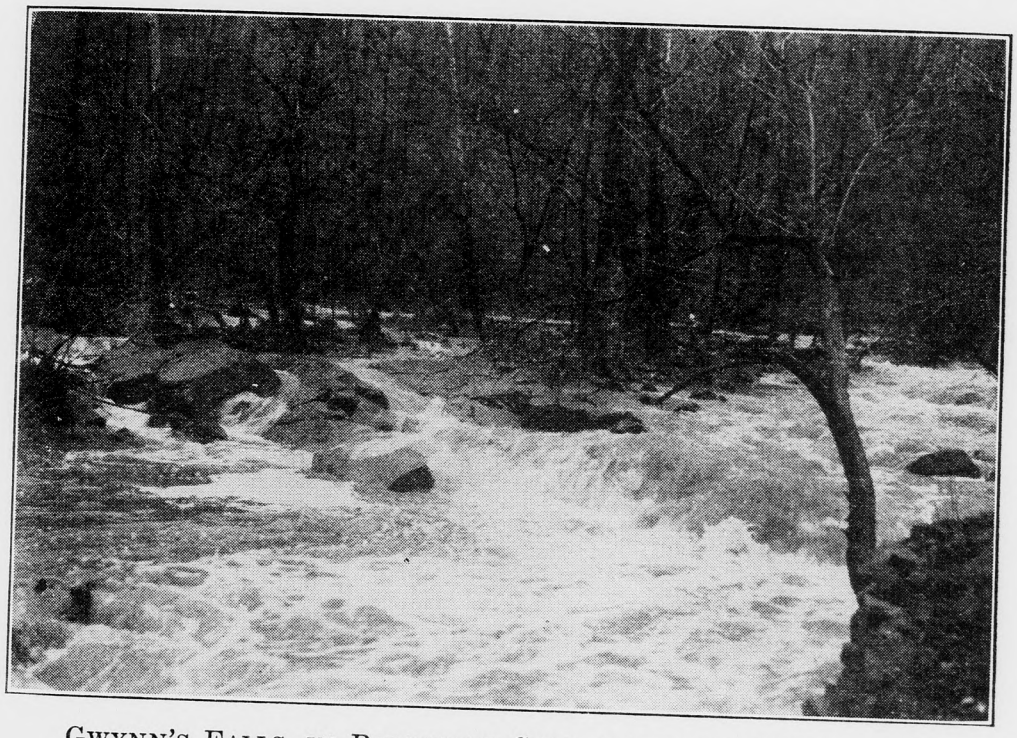

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Early in April, Conservation Commissioner Earle, together with other officials of the Department, including Captain G. Frank Akers, deputy commander in charge of the upper Bay district, made an investigation of the oyster bars lying to the west of Craighill Channel down to Sandy Point, and found that the report of the dredgers was substantially correct. A number of rocks showed a great many large oysters, over three inches, as well as undersized ones, and it was not deemed advisable to disturb them at this time. The trip of inspection, however, included the oyster bars as far as Phoenix Shoals, off Fairlee Creek, Kent County, Flat Rock, Tolchester, Tea Table, Hodge's and Craighill bars. All of these oyster bars showed an unusual quantity of young growth.

On Phoenix Shoals, where the water was found to be very fresh, only small oysters were growing, and it was decided to move as many of these as practicable to other localities to prevent their being killed by the increasing freshness of the water. Oysters were also found to be too thick on several of the other bars and thinning out would not only be beneficial to the bars in question, but the removal to other bottoms would assure rapid growth, and give the dredgers a better opportunity for future operations.

It was concluded that not more than four boats could be used to advantage for the work of transferring the oysters, and arrangements were to be made as soon as possible to begin operations. The following boats were engaged:

Amy Mister—Captain John R. Benton,
Catherine—Captain Tal Mister,
H. M. Rowe—Captain W. C. Todd,
Emma Temple—Captain Edgie Shores.

The work was commenced on April 24th and completed on May 2nd with the removal of 24,000 bushels from the following oyster bars:

2,000 bushels from Phoenix Shoals
2,000 bushels from Flat Rock
2,000 bushels from Tolchester Bar
2,000 bushels from Hodge's Bar
10,000 bushels from Tea Table Bar
2,000 bushels from Craighill Bar
4,000 bushels from the lumps near Tea Table

24,000 bushels total

Of this number 16,000 bushels were planted on the Nine Foot Shoals, or Middle Ground, lying east of Craighill Channel, and 8,000 bushels on Brick House Bar, adjacent to Kent County. Both of these locations are considered exceptionally good growing bottoms, the former having produced very large oysters during the past season.